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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/753,495	01/09/2004	Jin Woong Kim	0465-1786PUS1	6825

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EXAMINER

HECKERT, JASON MARK

ART UNIT	PAPER NUMBER
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1792

NOTIFICATION DATE	DELIVERY MODE
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08/04/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/753,495	Applicant(s) KIM ET AL.	
	Examiner JASON HECKERT	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6-19,25-30,42,43 and 45-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-2, 4, 6-19, 25-30, 42-43, 45-58 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Due to applicant's amendments to the claims, the previous rejections are rendered moot.

Claim Rejections - 35 USC § 112

2. Claims 53-58 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The applicant's specification does not include language that describes the heater as being arranged to extend along an outer surface of the steam tube. Additionally, the steam tube is disclosed as attaching to the steam generator via the outlet tube at a location *outside* of the generator. Thus, claims 53-58 are considered to be new matter.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-2, 6-7, 16-19, 26-30, 42-43, 45-49 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu et al (US 2003/0061842) in view of Nakamura and further in view of DE 197 43 508 ('508). Ryu presents a horizontal drum washing machine that

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the examiner believes is an accurate representation of what was considered to be conventional in the art at the time of invention. As seen in figure 2, a casing 10 surrounds a tub 20 and a drum 30. A water supply unit supplies water to the tub and is recirculated by a pump 51 back into the tub. Ryu does not teach the addition of steam into the horizontal drum. Nakamura teaches a steam generation system for a washing machine comprising a valve 17 and a water supply tube 16 connecting the valve to an inlet of container 6. Said container has a boiler 7 and a cylindrical outlet tube 8 with an upper end disposed at an upper part of the container and a lower end disposed outside the container. This upper part of the container protrudes from the lower part and, considering steam rises, a portion of this upper part will store steam before it leaves the container. Furthermore, if steam is to travel through tube 8, then the tube must be fixed to the container at a location in correspondence with the steam storing part. Finally tube 8 is connected to a nozzle 20 that delivers steam to the laundry, which is a functional equivalent of a steam tube. Water introduced to this generator ultimately is injected into the tub. Thus, steam generation means, as claimed in the instant application, was also known at the time of invention from the teachings of Nakamura. The question arises, of whether it would be obvious to incorporate the steam generation of Nakamura, which is used for pre-treatment in a vertical washer, as a heating means for the washing process within a horizontal washer. The examiner that it would be obvious based on the teachings of '508. '508 presents three important teachings germane to the instant application. First, steam has been conventionally applied to horizontal drum washing machines during the washing process for the quick heating of

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wash water. '508 states that steam has the advantage of releasing a particularly high amount of energy in the form of heat during condensation (page 2 of applicant supplied translation). Second, '508 discloses that it is known include the steam generation system 9 in between the tub and casing and to attach an inlet port for steam at the top of a horizontal tub (see figure 1 of '508). The third relevant teaching from '508 is that it is conventional to supply water to the steam generation system independently of the detergent system. That is, '508 teaches the use of independent valves 15 and 25 for the delivery of water to various parts of the machine. Thus Ryu presents the conventional washer, Nakamura provides the means for steam delivery, and '508 provides the motivation for use and method of attachment of a steam generation system within a horizontal washer. Thus, the examiner believes that it would have been obvious at the time of invention to modify a conventional horizontal washing machine, such as one disclosed by Ryu, and include a steam generation system comprising a water source, heater, and container, as taught by Nakamura. The generation system can be attached to the top of the tub, and have an independent source of water, as taught by '508, such that steam can be supplied to a horizontal drum washing for quick heating of wash water.

5. The location of the water-supply valve is not considered to be a patentably distinct feature, as valve 15 of '508 can perform the required function at any location on the conduit. '508 discloses the output of steam is injected downwardly into the tub towards a center portion. The generation unit is located outside the tub. '508 teaches the separate detergent dispenser and associated water supply. '508 does not disclose

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that the steam generation system is within a container. In regards to claims 18, in the box-like generator of Nakamura, the upper 50% of the volume constitutes an “upper part”. Hence, Nakamura’s steam generating device read on the broadest reasonable interpretation of the applicant’s claims. Nakamura’s machine has a vertical drum, not a horizontal drum.

6. In regards to claims 17 and 28, Nakamura et al. discloses the steam generation unit as being located above the tub and between the tub and the casing. ‘508 shows a steam unit between the tub and casing. Neither shows it below the tub between the tub and the casing. Rearrangement of parts was held to have been obvious. *In re Japikse* 86 USPQ 70 (CCPA 1955). It would have been obvious at the time of the invention to modify Ryu in view of Nakamura et al. in view of ‘508 and alter the location of the steam generator to fit different design parameters.

4. Claim 4, 25, 50 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu in view of Nakamura in view of ‘508 and further in view of Chang. Nakamura et al. does disclose the steam tube being located in the upper end of the tub for delivering steam but does not disclose a gasket for preventing leakage of water between the tub and the casing. Chang discloses a gasket 35 for preventing leakage from tub 5. Furthermore, gaskets are notoriously well known in the art, and simply including them for their conventional use cannot be considered novel. It would have been obvious at the time of the invention to modify Ryu in view of Nakamura in view of ‘508, as stated above, and further include a gasket as taught by Chang for preventing leakage. It would also be obvious for the steam supply to penetrate this gasket in some regard, otherwise the

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steam generator would not be able to perform its intended function of delivering steam to the tub, a function disclosed by Nakamura et al.

5. Claims 8-9 rejected under 35 U.S.C. 103(a) as being unpatentable Ryu in view of Nakamura in view of '508 in view of Sloan et al. and further in view of Wang. Nakamura et al. does not disclose a submerged heating element. Sloan et al. discloses a steam generator with an electric heating element 14 disposed in such a fashion that even at a minimum water level, proper heating takes place. Heating coils are notoriously well known in the art. Wang also discloses a steam generator with a slightly different arrangement, in which heating coil 14 is at the bottom of the boiler 11, but not below a conductive material like Sloan et al. It would have been obvious at the time of the invention, to modify Ryu in view of Nakamura in view of '508, as stated above, and arrange an electric heating coil at the bottom of the boiler, as taught by Sloan et al. and Wang, in order to allow water to boil even at its minimum level.

6. Claim 10 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu in view of Nakamura in view of '508 in further view of Pick. Nakamura et al. does not disclose the inlet valve being controlled by solenoids. Solenoid valves are notoriously well known in the art and their use cannot be considered novel. Pick discloses an inlet valve of a washing machine that is operated by solenoids. It would have been obvious at the time of the invention to modify Ryu in view of Nakamura in view of '508, as stated above, and provide a solenoid inlet valve, as taught by Pick, so that the valve can be controlled electrically.

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7. Claim 11, 51 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu in view of Nakamura in view of '508 in further view of Aksenov et al. Nakamura et al. does not disclose a temperature sensor in the boiler. Aksenov et al. disclose an electrically heated steam generator with control 40 and temperature sensor 41. Furthermore, temperature control is notoriously common in the art. It would have been obvious at the time of the invention to modify Ryu in view of Nakamura in view of '508, as stated above, and include a temperature sensor with associated control elements as taught by Aksenov et al., in order to control the temperature of the temperature inside the boiler.

8. Claim 12, 52 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu in view of Nakamura in view of '508 in further view of Tsutsumi. Nakamura et al. does not disclose a blower or fan in the outlet tube. The applicant does not clearly show how a blower would be included in said apparatus. However, the use of a blower or fan is notoriously well known in the art for the purpose of driving steam out of the generator. Tsutsumi discloses such a fan 12 for driving steam out of a steam generator. It would have been obvious, at the time of the invention to modify Ryu in view of Nakamura in view of '508, as stated above, and include a blower near the outlet of the generator, as taught by Tsutsumi, in order to force steam out of the generator.

9. Claims 13-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu in view of Nakamura in view of '508 in further view of Glucksman. Nakamura does not disclose a wash-water flow-restraining unit mounted in the container. Various known methods for restraining, or controlling fluid flow, are known in the art from simple float valves to elaborate processes involving detection and control schemes. Any of these

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would read on "flow restraining unit". Glucksman discloses a water control means involving partitions in figure 3. Chamber 30 extends down to just above the bottom of tray 42, like partition 1 of the claimed invention. Outside of chamber 30 exists another wall surrounding the walls of 30, so as to divide the chamber into different water holding areas, each of uniform level. Finally, a passage exists below the wall of chamber 30 for allowing water to flow from one compartment to the other. It would have been obvious to modify Ryu in view of Nakamura in view of '508, as stated above, and include partitions, as taught by Glucksman, in order to maintain proper water level in the apparatus.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON HECKERT whose telephone number is (571)272-2702. The examiner can normally be reached on Mon. to Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571)272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael Barr/
Supervisory Patent Examiner, Art
Unit 1792

JMH